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PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

**Improved Means for use in Administering Drenches to Sheep
and the like**

I, WILLIAM PETERSON, of 27, William Street, Gore, in the Dominion of New Zealand, a British Subject, do hereby declare the nature of this invention to be as follows:—

This invention relates to improved means that have been devised for use in the administration of liquid drenches to sheep and other animals. These means are concerned with a system of dosing the animal by means of a drench gun having provision for the regulation of the measure of the dose and the supply of the drenching mixture to which is fed to the gun from an overhead reservoir containing any desired quantity of the liquid.

The invention is concerned with the features of construction of the said reservoir and particularly with provision therein whereby the contents of the reservoir may be automatically kept agitated to ensure of the mixture forming the drenching liquid being maintained uniform in quality, as the drenching operations are carried out upon a number of animals. This repeated agitation of the mixture is specially required in connection with the use of liquid mixtures in which the medicines are in suspension, as for instance with the phenothiazinal drenches now commonly in use for sheep.

The invention also is concerned with a drench gun having novel means whereby the measure of the dose delivered into it for each operation may be regulated.

The essential feature of novelty in respect of the reservoir consists in the provision of means whereby the vessel forming the reservoir is provided with an air vent so made and positioned respecting its opening into the vessel that as the air enters to permit of the flow of liquid from the vessel it will serve to agitate the matter remaining in such vessel. This reservoir has, however, other novel features which are concerned with its charging and manner of use.

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In giving effect to the invention as to this part thereof, the said reservoir is made of glass or other suitable material and is formed with a filling mouth which is provided with a suitable closure adapted to make a tight liquid seal thereon. Suitably the closure may be formed as a tapered plug fitting into the mouth and secured therein by means of a clamping screw passing through a bridle pivoted on a neck surrounding the mouth and engaging the outer end of the plug to force it inward on to its seat.

In its use the reservoir forming vessel is designed, after being filled and sealed, to be inverted and suspended upon any fixture and for the purpose of such suspension a band is secured around it near its base and from such band a suspension loop extends to pass round the vessel bottom. This loop when passed over a hook or other like fixture will cause the vessel to be suspended mouth downward.

The withdrawal of the contents is provided for by means of a tube passing upward through the plug to open into the inside of the vessel and to which tube a flexible pipe is attached to convey the liquid downward to the drench gun part of the apparatus. The air vent before-mentioned is formed by a pipe bent into U form adapted to be arranged within the vessel and one leg of which passes through the mouth closure plug while its other end finishes inside the vessel close to such plug. This device is made of such a length that its bend is positioned close to the bottom of the vessel, so that when the vessel is inverted for use, the bend will be above the level of liquid in the vessel and the mouth of the tube will be positioned near the point of discharge through the withdrawal tube.

Consequently, as air from the outside enters through this vent pipe to permit of the draw off of the liquid to the drench

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gun, it will flow in a stream from the inside end of the tube into the bottom of the liquid contents and agitate the same in the desired manner.

5 The drench gun used with this reservoir is designed to be charged through the aforesaid flexible and compressible tube as required, by the tube being opened up from a normally closed condition effected by being squeezed or compressed. The rate of flow through such tube is governed by means also of a pinch screw pressing on the wall of the tube to regulate the area of its opening.

10 This gun in its general features of construction and operation is formed by a cylindrical frame designed to be grasped in the hand, from one end of which a mouthpiece nozzle extends, and into the other end of which a small bottle is designed to be inserted to be secured with its mouth pressed into a seat upon the inside end of the nozzle. This bottle is graduated to indicate different measures of its filling, and the frame is broken away to expose a sufficient part of the bottle length to enable the graduations to

be seen. A charging tube enters the nozzle at a suitable distance from its outlet and to this the said flexible charging tube is connected after passing through a clamping device mounted on the said frame. This device, by suitable spring or like means, normally bears on the tube to keep it closed but it is adapted to be opened and kept open by a trigger extending parallel with the frame and upon which pressure may be exerted by the thumb of the operator's hand encircling the frame.

The gun is charged by holding it, nozzle up, in the hand and opening the charging tube until the desired quantity has flowed into the bottle. The tube is then closed to cut off further flow and the drench may then be poured out through the nozzle into the animal's mouth.

Dated this 7th day of July, 1947.

SEFTON-JONES, O'DELL & STEPHENS,

Chartered Patent Agents,
15, Great James Street,
London, W.C.1.
Agents for the Applicant.

COMPLETE SPECIFICATION

Improved Means for use in Administering Drenches to Sheep and the like

I, WILLIAM PEARSON, of 27, William Street, Gore, in the Dominion of New Zealand, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improved means that have been devised for use in the administration of liquid drenches to sheep and other animals. These means are concerned with a system of dosing the animal by means of a drench gun having provision for the regulation of the measure of the dose and the supply of the drenching mixture to which is fed to the gun from an overhead reservoir containing any desired quantity of the liquid.

The invention is concerned with the features of construction of the said reservoir and particularly with provision therein whereby the contents of the reservoir may be automatically kept agitated to ensure of the mixture forming the drenching liquid being maintained uniform in quality, as the drenching operations are carried out upon a number of animals. This repeated agitation of the mixture is specially required in connection with the use of liquid mixtures

in which the medicines are in suspension, as for instance with the phenothiazinal drenches now commonly in use for sheep.

The invention also is concerned with a drench gun having novel means whereby the measure of the dose delivered into it for each operation may be regulated.

The essential feature of novelty in respect of the reservoir consists in the provision of means whereby the vessel forming the reservoir is provided with an air vent so made and positioned respecting its opening into the vessel that as the air enters to permit of the flow of liquid from the vessel it will serve to agitate the matter remaining in such vessel. This reservoir has, however, other novel features which are concerned with its charging and manner of use.

The drench gun, also forming part of this invention, is designed to be fed through a flexible tube connection with the reservoir and is so made as to adapt it for being charged with any desired measure of the drench for each operation thereof.

In order that the invention may be completely understood reference will be made to the accompanying sheet of drawings in which:—

Figure 1 is an elevation of the means,

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the drench gun part thereof being drawn on a greater scale than the reservoir.

Figure 2 is a vertical sectional elevation of the reservoir part and

Figure 3 is a sectional elevation of the drench gun part of the means.

In giving effect to the invention as to the reservoir part thereof, the said reservoir A is made of glass or other suitable material and is formed with a filling mouth A' which is provided with a suitable closure adapted to make a tight liquid seal thereon. Suitably the closure may be formed as a tapered plug B fitting into the mouth and secured therein by means of a clamping screw C passing through a bridle D pivoted on the neck band D' surrounding the mouth and engaging the outer end of the plug to force it inward on to its seat.

In its use the reservoir forming vessel A is designed, after being filled and sealed, to be inverted and suspended upon any fixture and for the purpose of such suspension a band E is secured around it near its base and from such band a suspension loop F extends to pass round the vessel bottom. This loop when passed over a hook G or other like fixture will cause the vessel to be suspended mouth downward.

The withdrawal of the contents is provided for by means of a tube H passing upward through the plug to open into the inside of the vessel and to which tube a flexible pipe J is attached to convey the liquid downward to the drench gun part of the apparatus. The air vent before-mentioned is formed by a pipe bent into inverted U form adapted to be arranged within the vessel A and one leg K¹ of which passes through the mouth closure plug B while its other leg K² finishes inside the vessel close to such plug. This device is made of such a length that its bend K² is positioned close to the bottom of the vessel, so that when the vessel is inverted for use, the bend will be above the level of liquid in the vessel and the mouth of the tube will be positioned near the point of discharge through the withdrawal tube H.

Consequently as air from the outside enters through this vent pipe K¹ to permit of the draw off of the liquid to the drench gun, it will flow in a stream from the inside end of the tube leg K² into the bottom of the liquid contents and agitate the same in the desired manner.

The drench gun used with this reservoir is designed to be charged through the aforesaid flexible and compressible tube J as required, by the tube being opened up from a normally closed condition effected by being squeezed or com-

pressed. The rate of flow through such tube is governed by means also of a pinch screw J' pressing on the wall of the tube to regulate the area of its opening.

This gun in its general features of construction and operation is formed by a cylindrical frame L designed to be grasped in the hand, from one end of which a mouthpiece nozzle M extends and into the other end of which a small bottle N is designed to be inserted to be secured with its mouth pressed into a seat O upon the inside end of the nozzle by the spring P compressed between its base and the frame. This bottle is graduated to indicate different measures of its filling and the frame is broken away as at L' to expose a sufficient part of the bottle length to enable the graduations to be seen. A charging branch M' enters the nozzle at a suitable distance from its outlet and to this the said flexible charging tube J is connected after passing through a clamping device R mounted on the said frame. This device, by a suitable spring such as the rubber band S fitted to the device's end and about the frame or other like means, is caused to normally bear on the tube to keep it closed but it is adapted to be opened and kept open by a trigger part R' extending parallel with the frame and upon which pressure may be exerted by the thumb of the operator's hand encircling the frame. The flow-control pinch screw J' may be suitably mounted in a threaded boss T below such clamping device in the frame side.

The gun is charged by holding it, nozzle up, in the hand and opening the charging tube until the desired quantity has flowed into the bottle. The tube is then closed to cut off further flow and the drench may then be poured out through the nozzle into the animal's mouth.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Means for use in administering drenches to sheep or the like such means comprising a drench holding reservoir provided with an air vent whereby air may enter into the lower part of the reservoir to cause the liquid therein to be agitated, and having a discharge outlet from which a flexible compressible tube may be led to supply liquid to a drench gun having means for controlling and regulating the quantity of such liquid supply.

2. In means for the purpose herein described and as covered by claim 1, a drench reservoir vessel having a filler mouth and a closure plug therefor, an

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outlet tube passing through such closure plug, to the outer end of which the said flexible compressible delivery tube is connected, and in which the said air vent
 5 for the passage of air into the lower end of the vessel is formed by a tube of U form arranged vertically within the vessel having one of its ends passing out through the said closure plug and its
 10 other end opening to the vessel at a point close to the inside of such plug while the bend of the tube is disposed close to the bottom of the vessel, and means whereby the said vessel may be
 15 suspended for use with its closure mouth downward.

3. In means for the purposes herein described and as covered by claims 1 and 2, fastening means for the said closure
 20 plug comprising a band secured around the neck of the filler mouth of the said reservoir vessel, a bridle hinged to the neck band and adapted to be swung across the outside of the plug and a screw passing through such bridle to engage the
 25 plug with its end.

4. Means for the purposes herein described and as covered by Claim 1 in which the said drench gun comprises a
 30 cylindrical frame adapted to be grasped

by the hand and having a discharge nozzle extending from one end thereof, a measuring bottle fitted into such frame with its mouth opening into the discharge nozzle, such cylindrical frame 35 being so made that the measuring bottle within it may be viewed, a charge branch entering the nozzle above the bottle's mouth and adapted to be connected with the said flexible compressible supply
 40 tube, a hand lever pivoted upon the frame and controlled to normally squeeze the compressible tube to close its passage and which lever has a trigger extension
 45 hand pressure upon which will cause the pressure upon the compressible tube to be released so that the tube may open.

5. Means for use in administering drenches to sheep or the like constructed and operated substantially as herein described and as illustrated in the accompanying drawings. 50

Dated this 22nd day of April, 1948.

SEFTON-JONES, O'DELL &

STEPHENS,

Chartered Patent Agents,

15, Great James Street,

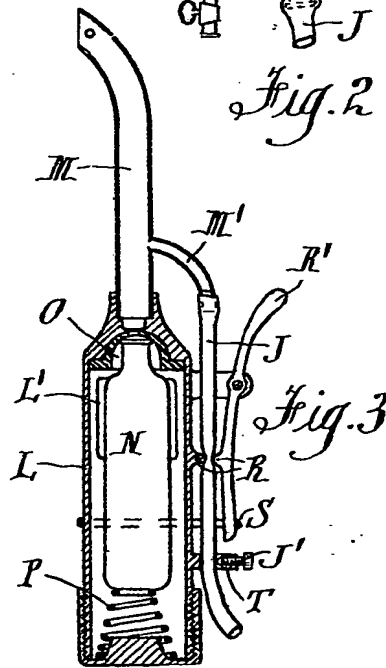
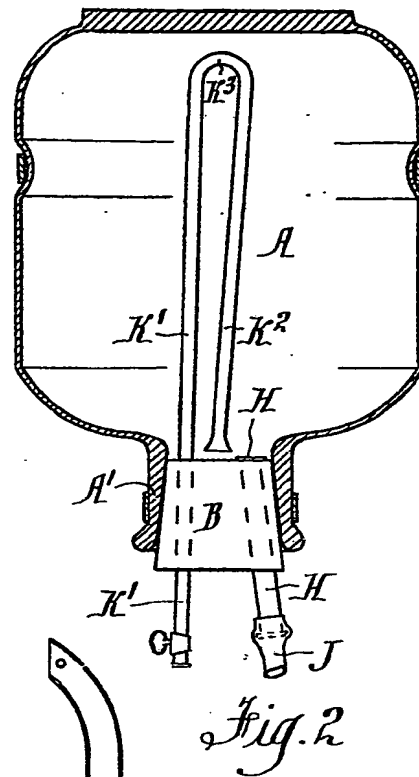
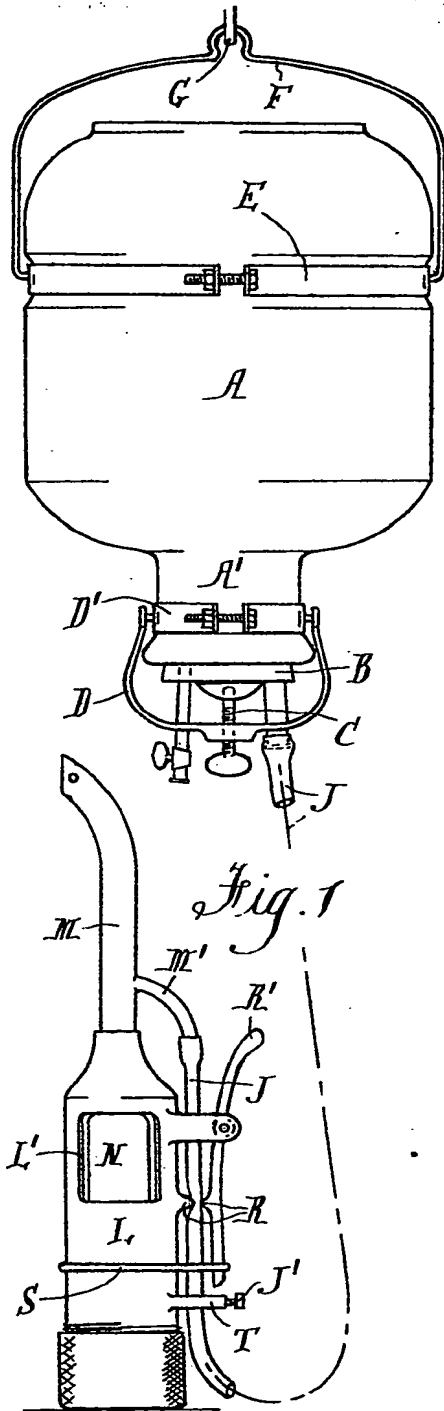
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Agents for the Applicant.

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H.M.S.O. (Ty.P.)

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